

Date: Mon, 7 Nov 94 04:30:53 PST  
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>  
Errors-To: Ham-Homebrew-Errors@UCSD.Edu  
Reply-To: Ham-Homebrew@UCSD.Edu  
Precedence: List  
Subject: Ham-Homebrew Digest V94 #329  
To: Ham-Homebrew

Ham-Homebrew Digest                      Mon, 7 Nov 94                      Volume 94 : Issue 329

Today's Topics:

300 Watt AM transmitter  
PCB Board from laser print??  
PC BRDS XY RESIST INK?  
RF Switching without relays ?  
VCO in Key Components of Mod RCVR Design (QST)

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>  
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

-----  
Date: 6 Nov 1994 23:42:23 -0500  
From: skeeterbdg@aol.com (SkeeterBDG)  
Subject: 300 Watt AM transmitter

Here is the more technical information on the Omni-300 AM Broadcast  
Transmitter. This is a long message, but contains pretty much everything  
you need... ...if you need more, let me know...

This transmitter was built and sold in June of 1992 by Omnitronix of PA.  
The transmitter was financed but ended up being repossessed in early 1994.  
It is in perfect condition and is ready to go! We are asking for \$6000  
or best offer--we have to sell it.

Electrical Description:

All Omnitronix transmitters are 100% solid state using extremely efficient  
pulse duration modulation (PDM) techniques. The nominal frequency range  
of the transmitter is 535 Khz to 1705 Khz. Front panel status indicators  
and meters facilitate diagnostics and operation. All components are

mounted on plug-in modules accessible from the front for ease of maintenance thus, minimizing downtime. The high reliability, greater ruggedness and excellent AC to RF conversion efficiency translates into a very short payback period. The transmitter consists of four major sub-assemblies all in one rack mountable case. They are the Control circuitry, the Power Amplifier section, the Antenna Interface Unit, and the Power Supply circuitry.

The Control Motherboard connects the Stereo Interface PCB, the PDM Exciter PCB, the Audio Processor PCB, the VSWR Protection PCB and the Control PCB.

All system monitoring is accomplished with front panel analog meters and LED's.

The 300 Watt Power Amplifier Modules plug into a motherboard in the Power Amplifier Panels. Cooling is accomplished by drawing air in from the rear of the transmitter and exhausting it via the front panel grills. The Antenna Interface Unit contains the Harmonic Filter, High Power Combiners, and the Directional Coupler. A hermetically sealed spark gap used to protect against antenna transient voltages. VSWR monitoring is accomplished using the dual directional coupler. Additional, lightning protection is afforded by the topology of the harmonic bandpass filter. The Power Supply Panel encompasses the isolation transformers, low and high voltage rectifiers, MOV's for power line surges, the power supply filter capacitors, fuses and circuit breakers, the Power Supply PCB and the power contactors.

#### Mechanical Description:

The transmitter is enclosed in a standard 19 inch relay rack. The transmitter is manufactured in modular 19 inch panels that are easily removable from the rack. No components are mounted to the cabinet.

#### Technical Specifications:

Power output: 300 watts

Emission type: A3

Frequency Range: 535 KHz to 1710 KHz

Output impedance: 50 ohms, unbalanced, type N connector

Exciter: Crystal Oscillator or Frequency Synthesized (option) 9/10 KHz steps

Frequency Stability: x5 ppm

Audio input impedance: 600 ohms

Audio input level: -10 dBm to + 10 dBm

Modulation: Up to 125% positive peak

Frequency Response: +0.3 dB, -0.7 dB 20 Hz - 10 KHz

Audio distortion: <1% 20 Hz - 10 KHz

Spurious and Harmonic Energy: Meets FCC spec through factory set filters

Remote Control: Transmitter On/Off, Reset, Power Cutback, Metering

Power Cutback: 5 field-selectable settings

#### Electrical Specifications:

Line voltage: 200 VAC 10%

Line frequency: 50/60 Hz  
Power consumption with no modulation: 500 watts,  
at 100% modulation: 800 watts

## Front Panel Indications

PA Module Voltage, Power, and Over-temperature LED indicators  
RF Output Meter Power (Forward or Reverse)  
AC/DC Volts Multimeter  
High Voltage Ammeter  
High VSWR, Over-Voltage

### Electronic Protection:

Overvoltage: 20% (automatic shutdown)  
Undervoltage: -40% (automatic shutdown)  
Overheating: Automatic shutdown of individual amplifier modules  
High VSWR: >1.2:1, full modulation (automatic shutdown)  
Automatic Restart: 3 attempts before switching to "Standby"  
Input Transient Protection: Isolation transformer and surge suppressors  
Output Protection: Gas tube on transmission line

### Mechanical Specifications:

Temperature: 0-50 C, derate 2 C per 300 mtrs (1000 ft)  
Altitude: 0-3000 mt (10,000 ft)  
Width: 49 cm (19 in)  
Height: 27 cm (10.5 in)  
Depth: 66 cm (26 in)  
Cooling: Low velocity air  
Weight: 31 Kg (68 lb)  
Type Approval: FCC ID HT9TX300

For additional information, or to make a bid, please email me back directly.

Thank you,  
Brett

Date: Tue, 01 Nov 1994 20:46:39 GMT  
From: snorris@harp.aix.calpoly.edu (Sean Norris)  
Subject: PCB Board from laser print??

I'm working on a project that requires me to make a PC board and I want it to be as hassle free as possible. I have seen many ads about some special paper which you can print with a laser printer, iron it onto the PC board, peel it off and then etch. Has anyone used this technique? If so, is it reliable? My project is all surface mount and at very high frequencies so the traces must be small and sharp.

If anyone has any experience/tips/brands/etc. I would appreciate it very much if you could E-mail me.

Thanks,

Sean

-----  
Sean Norris   snorris@trumpet.aix.calpoly.edu  
--KE6BTE--    Loyalty, above all else.  
-----

-----  
Date: Sun, 6 Nov 1994 19:40:16 GMT  
From: mzenier@netcom.com (Mark Zenier)  
Subject: PC BRDS XY RESIST INK?

Tom Alldread (tom.alldread@kbsbbs.com) wrote:  
: I have heard that there is a resist ink available for X/Y pen  
: plotters that one can use with an appropriate CAD program to draw a  
: circuit pattern directly onto bare board stock. My understanding is that  
: the resulting board can then be etched directly without any intermediate  
: processing steps.

There was a lot of discussion of this in sci.electronics about a year ago.  
Here's the parts I remember. Sorry I can't give credit to those  
knowledgeable.

The recommended ink was Staedtler permanent red. The problem is that  
it's not longer imported as a liquid ink because the market was too  
small to justify the cost of compliance with the hazardous chemical  
laws and regulations. You can get marking pens with the ink already  
in them, just not the liquid ink for use in reinkable plotter pens.

One of the pens I bought as a result of the discussion was a  
Staedtler Lumocolor 313. (Havn't got around to using it yet. ;-( )

Mark Zenier   mzenier@netcom.com   mzenier@eskimo.com  
-----

Date: 4 Nov 1994 22:28 -0500  
From: drobert@vax2.concordia.ca (Denis Robert, ve2ilf)  
Subject: RF Switching without relays ?

I'm looking for schematic(s) of general purpose RF TX/RX switching  
circuits using diodes. I'd like the switching to be powered by the RF signal

feeding it. I've seen some bits and pieces of this principle but never a complete 'generic' schematic that one could use to add to a setup or modify equipment.

thanks for any suggestions.

Drobert@vax2.Concordia.ca  
Drobert@Conu2

-----  
Date: 6 Nov 1994 23:26:58 -0500  
From: paulbreed@aol.com (PaulBreed)  
Subject: VCO in Key Components of Mod RCVR Design (QST)

In article <3988e8\$klb@bmerha64.bnr.ca>, kirkland@bgtys22.bnr.ca (Bill Kirkland) writes:

<snip>  
Where do I get a 9.2nH Inductor  
<snip>

I sent the ARRL E-Mail questioning this value and they sent me back a note saying that it was a mis-print and should be 92nH not 9.2, the 92 looks about right given the parallel C of all those diodes and the stated frequency range.

Paul Breed

-----  
Date: 6 Nov 1994 03:35:50 GMT  
From: browere@einstein.UCSD.EDU (Eric B.)

References<395svn\$ksa@kelly.teleport.com> <1994Nov2.015906.8454@ke4zv.atl.ga.us>,  
<Cyt9nw.84w@news.Hawaii.Edu>  
Subject: Re: THE LITTLE RAZOR BLADE RADIO (UPDATE)

Jeffrey Herman (jeffrey@kahuna.tmc.edu) wrote:  
: I sure hope someone is collecting all these articles and will find  
: an archive site for them. This topic is quite interesting, and reading  
: it is like taking a step back in time. It's almost as if we're seeing  
: radio receivers invented all over again.  
  
: Now we need some ideas concerning basic transmitters.

I have misplaced some of the earliest articles. If someone has indeed been collecting, please let me know!!

As for basic transmitters, I am eagerly awaiting posts from fellows more knowledgeable than myself!! :)

-----

End of Ham-Homebrew Digest V94 #329

\*\*\*\*\*